

~~SECRET~~
Security Information

21 OCT 1953

MEMORANDUM FOR: C/TSS

ATTENTION:

50X1

SUBJECT: Test of Infra-Red Beacon

1. Enclosed herewith is a field report ~~on~~ (SGAA 6250)^{on} preliminary test of infra-red equipment loaned this Division by TSS. This report is submitted per our oral agreement prior to the loan of the equipment.

2. Your attention is invited to paragraph 6 and 7. We would appreciate the loan of additional equipment listed for further testing.

3. is available for coordination of this request.

50X1

Chief, SE

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Enclosure: 1

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SEP 29 1953

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AIR

SGAA- 6250

Chief,

50X1

50X1

Air/Maritime Support
Tests of Infra-Red Beacon

REF:

1. Subject equipment on loan from was given sea test the night of 18 August and air test the night of 20 August.
2. The sea test was conducted with personal boat and dinghy in a semi-sheltered cove of an island off A stiff breeze was blowing. and participated. The gasoline beacon was positioned on the superstructure of the larger boat. manipulated the binoculars while rowing the dinghy. was unable to make the equipment effective at more than one mile. However, this may have been caused by failure to properly adjust the somewhat complicated double focusing of the binoculars as distances from the beacon changed. also found the binoculars and headgear rather clumsy and tiresome to one with both hands occupied. It was 's opinion that while the device has some imperfections, it is by far the best thing we have seen out here for clandestine vessel-to-vessel or vessel-to-shore signalling. Whereas the lantern unit does emit some downward light, that could be screened by something improvised on the spot. The initial firing up of the mantles would be a major problem in a really tight security situation. It is felt that some training and experience in use of the binoculars would probably extend the one-mile range limit we experienced.
3. The air test was conducted at airfield with a C-47. manipulated the beacons (one with white magnifying lens and one with red magnifying lens) at an isolated section of the airfield, away from other lights. and a crew chief rode in the aircraft. Six passes were made parallel to and to one side of the beacons at altitudes varying from 1800 to 600 feet. Moonlight was sufficient to identify the ground party

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with the naked eye. High winds and turbulence made the control of altitude, airspeed, and attitude difficult. The binoculars gave considerable trouble by losing charge and blacking out, though fresh batteries were used. The focusing problem was magnified by the approach and departure speeds of the fast-moving vehicle. The result was that the beacons were never observed, though other and stronger lights in the vicinity could be picked up, as could the moon. How much the metal hoods atop the lanterns may have screened the mantles could not be ascertained accurately, though it is thought not at all. However, it is obvious that an observer in the cockpit of an aircraft such as a C-47, passing directly over the beacon, will lose his view somewhat before reaching the beacon. The headgear for the binoculars is altogether too cumbersome and tiring for use in the cockpit of a C-47 and the minimum of white cockpit lights were found to interfere materially with viewing through the binoculars while mounted on the headgear. Even with a maximum of training and familiarity it is felt that the equipment in its present form would have very limited air-to-ground capabilities if there are other lights anywhere in the vicinity of the ground beacon.

4. The tests here are thought to have been a fair simulation of average field conditions in that participants were not thoroughly trained in use of the equipment and the beacon lanterns arrived with cracked magnifying lenses and leaking tanks. One of the two pairs of binoculars could not be made to function at all.
5. Given a small supply of the light filtering material used on the beacon, this station could improvise an electrically powered beacon for the mast of vessel. Such a maritime beacon could be further refined by use of an indicator in cockpit or wheelhouse to indicate if unit is working and/or a coded flashing signal be transmitted. It has also been suggested that the hand-generated metascope in use among the Armed Services might in some situations be a more practical device than the binocular headset with batteries.
6. It is the opinion of personnel at this station that while some improvements are needed in the equipment loaned us, it is a great deal better for clandestine, visual signalling than none at all. It is thought to have definite maritime possibilities and with careful training in its manipulation, might have some application if used in an aircraft having a bombardier's compartment in the nose. It is therefore requested that if available, as many sets be provided this station as possible, up to a maximum of six (6).
7. As an interim measure it is requested this station be furnished a small supply of the infra-red screening material as used on the gasoline lanterns and two or three of the viewing binoculars or hand-powered metascopes. We are in a position in the maritime field to improvise with these materials and conduct training with them.

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Distribution:

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P-60A

OO to Govt.

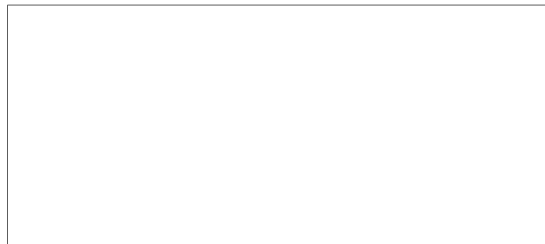
OFFSHORE OPERATIONS, INC.✓

Gentlemen: Re: Operations Diogenes

In reply to your request for a quotation for special lanterns, we wish to offer the following:

1. In lots of 100 units-----\$164.00 each ✓
2. In lots of 500 or more units-----\$ 99.00 each

Very truly yours,



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